

**REMARKS**

By the present Amendment, claims 1 and 4 have been amended to include the recitations previously recited in claims 2 and 5 and such claims have been canceled without prejudice or disclaimer. In addition, claim 1 has been further amended to recite the number average molecular weight of the epoxy group containing styrene type resin (B2) consistent with the description provided on page 11, lines 2-5 so that claims 1 and 4 are consistent. Finally, a typographical error has been corrected in claim 3.

As set forth in claim 1, one aspect of the present invention relates to a binder resin for toner that contains a polyester resin (E) comprised of at least a structural unit having a polyester structure (A), a structural derived from styrene type resin (D), a structural derived from a epoxy group (C) and a structural derived from polyisocyanate (D). The polyester resin (E) is obtained by reacting 55-99 weight parts of polyester type resin (A2) that has an average molecular weight (Mn) of 1000-50,000, a hydroxyl value of 4-100 mgKOH/g and an acid value of 1-40 mgKOH/g, 45-1 weight parts of an epoxy group containing styrene type resin (B2) that has a number average molecular weight (Mn) of 1000-30,000 and an epoxy equivalent value of 1000-30,000 g/equivalent, and 0.1-2.5 mole equivalents of polyisocyanate (D2) as isocyanate group for 1 mole equivalent total hydroxyl value of polyester resin (A2).

As set forth in the specification, such as on page 9, a polyester resin having the defined characteristics including a hydroxyl value of 4-100 mgKOH/g is well balanced in offset-resistance and fixing properties. Furthermore, the defined epoxy group containing styrene type resin (B2) having the defined characteristics enables the binder resin to be well balanced in compatibility with the polyester resin and

viscosity so as to further obtain excellent offset resistance properties as disclosed on page 11. The epoxy equivalent value of 1000-30,000 g/equivalent further enables the resin to be well balanced in fixing properties and viscosity. Moreover, the defined amount of resin (B2) enables the binder resin to exhibit environmental stability and fixing properties as disclosed on page 16. Thus, the polyester resin is well balanced in offset resistance properties, fixings properties, viscosity and environmental stability.

The advantages which can be obtained in accordance with the present invention are illustrated in the Examples starting on page 26 of the specification with the results being summarized in the various tables such as Table 1 on page 36. As maybe seen therefrom, when following the teachings of the present invention, one can obtain acceptable properties, particularly fixing properties, offset-resistance properties, environmental stability and storage properties. In contrast, when resins are prepared that do not meet the recited characteristics, one or more unacceptable properties occur.

With the amendments to the claims of record, the foregoing discussion and the evidence provided in the specification in mind, those of ordinary skill in the art will recognize that the claims now of record cannot be rejected over the cited prior art. Initially, it will be noted that the anticipation rejection based on JP 2000-029247 and the rejection of claim 3 based on the '247 publication and the Nakanishi et al., U.S. Patent No. 6,992,150, has been rendered moot since claims 1 and 4 have been amended in the manner discussed above. With respect to the rejection under 35 U.S.C. §103(a) over the combination of the '247 publication and Hattori, U.S. Patent No. 5,665,510, applicants respectfully maintain that the '247 publication does not disclose or teach the specific polyester resin (E) of claim 1 or (G) of claim 4. Instead,

the '247 publication describes a toner binder which is the combination of a polycondensation resin (A) and other resin (B) in order to obtain a defined dielectric tangent satisfying a defined relationship. The polycondensation resin (A) can be any of a variety of resins set forth in paragraph [0005] which includes polyester, polyamide, polyurethane, polycarbonate, polyesteramide, polyesterurethane, etc. The other resin (B) is described in paragraph [0013] and can again be a variety of different resins many of which are not styrene type resins. Even if a polyester resin and a styrene type resin is selected, the '247 publication does not provide the specific characteristic set forth in the claims of record. In this respect, applicants have previously explained that the epoxy equivalent value of 1000-30,000 g/equivalent is important to obtain a balance in fixing properties in viscosity, features that the '247 publication nowhere mentions.


In an attempt to remedy the deficiencies of the '247 publication, the Examiner has relied on Hattori and has referred to the epoxy equivalent recited in the paragraph bridging columns 3 and 4 which is described as being relevant in order to obtain good pulverization and blocking resistance. However, the patent does not recognize that the claimed epoxy equivalent range in combination with the other defined characteristics enables a resin have offset resistance properties, fixing properties, viscosity and environmental stability as can be obtained in accordance with the present invention and has been shown in the illustrative Examples provided in the specification. Thus, the present invention marks a substantial advance in the art that is patentable over the cited prior art. Accordingly, the claims now of record are neither anticipated nor rendered obvious by the cited prior art (including Nakanishi et al. which was cited for the teaching of the recited glass transition temperature) and therefore the claims of record are believed to be patentable in all

regards. Applicants therefore respectfully requested reconsideration and allowance of the present application.

Should the Examiner wish to discuss any aspect of the present application, he is invited to contact the undersigned attorney at the number provided below.

Respectfully submitted,

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